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Weather-based decision tools

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Useful to Usable (U2U): Transforming Climate Variability and Change Information for Cereal Crop Producers, is a USDA-funded research and extension project designed to improve the resilience and profitability of U.S. farms in the Corn Belt amid a changing climate. The team of over 50 faculty, staff, and students from nine Midwestern universities are experts in applied climatology, crop modeling, agronomy, cyber-technology, agricultural economics, and other social sciences. We are working together, and with members of the agricultural community, to develop decision support tools, resource materials, and training methods that lead to more effective decision making and the adoption of climate-resilient practices. The five tools listed below have been developed and are available for public use at https://mygeohub.org/groups/u2u/decision_resources.

AgClimate view

A convenient way to access customized historical climate and crop yield data for the U.S. Corn Belt. View graphs of monthly temperature and precipitation, plot corn and soybean yield trends, and compare climate and yields over the past 30 years.

CornGDD

Track real-time and historical GDD accumulations, assess spring and fall frost risk, and guide decisions related to planting, harvest, and seed selection. This innovative tool integrates corn development stages with weather and climate data for location-specific decision support tailored specifically to agricultural production.

Climate patterns viewer

Discover how global climate patterns like the El Niño Southern Oscillation (ENSO) and Arctic Oscillation (AO) have historically affected local climate conditions and crop yields across the U.S. Corn Belt.

Corn split N

Determine the feasibility and profitability of using post-planting nitrogen application for corn production. This product combines historical data on crop growth and fieldwork conditions with economic considerations to determine best/worst/average scenarios of successfully completing nitrogen applications within a user-specified time period. Currently available for Iowa, Illinois, Indiana, Kansas, and Missouri.

Probable fieldwork days

This spreadsheet-based tool uses USDA data on Days Suitable for Fieldwork to determine the probability of completing in-field activities during a user-specified time period. This product is currently available for Illinois, Iowa, Kansas, and Missouri. (Hosted by the University of Missouri)